

CLAIMS:

1. A wavelength control device for a laser device including
a movable holder for making an optical component movable
5 with respect to a laser optical axis, and
a laser controller for moving said optical component with
respect to the laser optical axis and changing an incident angle
of laser light on a band narrowing optical component to thereby
control a center wavelength of the laser light to be a target
10 wavelength,

wherein said movable holder comprises a first drive
mechanism moving by a very short distance and a second drive
mechanism moving by a longer distance than said first drive
mechanism.

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2. The wavelength control device for the laser device in
accordance with Claim 1,

wherein said first drive mechanism comprises a
piezoelectric element unit, and

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wherein said second drive mechanism comprises a pulse
motor unit.

3. The wavelength control device for the laser device in
accordance with Claim 1,

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wherein on moving said optical component, said laser

controller moves said optical component by means of said first drive mechanism, and thereafter, moves said optical component by means of said second drive mechanism.

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4. The wavelength control device for the laser device in accordance with Claim 2,

wherein on moving said optical component, said laser controller moves said optical component by means of said piezoelectric element unit, and thereafter, moves said optical component by means of said pulse motor unit.

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5. The wavelength control device for the laser device in accordance with Claim 1,

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wherein said laser controller moves said optical component by means of said first drive mechanism to set the center wavelength at the predetermined target wavelength, and compensates a positional change of said optical component caused by returning said first drive mechanism to a neutral position by means of said second drive mechanism, in a state in which the center wavelength is set at the target wavelength, at the same time that the laser controller returns said first drive mechanism to the neutral position.

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6. The wavelength control device for the laser device in accordance with Claim 2,

wherein said laser controller

5 moves said optical component by means of said piezoelectric element unit to set the center wavelength at the predetermined target wavelength, and
compensates a positional change of said optical component caused by returning said piezoelectric element unit to a neutral
10 position by means of said pulse motor unit, in a state in which the center wavelength is set at the target wavelength, at the same time that the laser controller returns said piezoelectric element unit to the neutral position.

15 7. The wavelength control device for the laser device in accordance with any one of Claim 1, Claim 3, and Claim 5, further comprising:

a wavelength monitor for monitoring the center wavelength of the laser light,

20 wherein on resuming laser oscillation after stopping the laser oscillation for more than a predetermined period of time, said laser controller drives said second drive mechanism and thereby changes a position of said optical component with respect to the laser
25 optical axis previously while the oscillation is stopped, based

on the target wavelength after resuming the oscillation, and drives said movable holder by means of said first drive mechanism and thereby changes the position of said optical component with respect to the laser optical axis again,

5 immediately after resuming the oscillation, based on the center wavelength of the laser light monitored by said wavelength monitor.

8. The wavelength control device for the laser device in
10 accordance with any one of Claim 2, Claim 4, and Claim 6, further comprising:

a wavelength monitor for monitoring the center wavelength of the laser light,

wherein on resuming laser oscillation after stopping the
15 laser oscillation for more than a predetermined period of time, said laser controller

drives said pulse motor unit and thereby changes a position of said optical component with respect to the laser optical axis previously while the oscillation is stopped, based on the target
20 wavelength after resuming the oscillation, and

drives said movable holder by means of said piezoelectric element unit and thereby changes the position of said optical component with respect to the laser optical axis again, immediately after resuming the oscillation, based on the center
25 wavelength of the laser light monitored by said wavelength

monitor.

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